```
=> d his

     (FILE 'HOME' ENTERED AT 11:50:46 ON 04 DEC 2000)

     FILE 'HCAPLUS' ENTERED AT 11:50:54 ON 04 DEC 2000
L1            13 S LIQUID PHASE CARRIER
L2             2 S NUCLEIC ACID SOLUTION PHASE SYNTHESIS
L3             1 S L2 NOT L1
L4           422 S SOLUTION PHASE(3W)SYNTHESIS
L5             1 S SOLUTION PHASE BIOPOLYMER SYNTHESIS
L6             0 S L5 NOT L1
L7            87 S SOLUTION PHASE(4A)SYNTHESIS(4A)(BIOPOLYMER OR BIO POLYMER
OR
L8            77 S (PREPAR? OR MANUF? OR PRODUC? ) AND L7
L9            87 S SYNTHES? AND L7
L10          426 S (L1 OR L2 OR L4)(6A)(PREPAR? OR MANUF? OR PRODUC? OR
SYNTHES?
L11           79 S L7 AND L10

     FILE 'WPIDS' ENTERED AT 12:05:04 ON 04 DEC 2000
L12           14 S L11
```

=> D BIB ABS 1-13

L1 ANSWER 1 OF 13 HCAPLUS COPYRIGHT 2000 ACS
AN 2000:628342 HCAPLUS
DN 133:225376
TI An efficient method for subsurface treatments, including squeeze treatments
IN Price, Ronald L.; Eden, Robert; Gaber, Bruce P.
PA The United States of America, as Represented by the Secretary of the Navy, USA
SO PCT Int. Appl., 26 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2000052301	A1	20000908	WO 2000-US5697	20000303

W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PRAI US 1999-122967 19990303
AB A method for delivering encapsulated materials to a subsurface environment, for the treatment of the subsurface environment, has the steps of: (a) loading the lumen of hollow microtubules with an active agent selected for treating the subsurface environment, where the hollow microtubules are compatible with the subsurface environment; and (b) administering the hollow microtubules to the subsurface environment, permitting the controlled release of the active agent into the subsurface environment. This method may be practiced using a slurry of hollow microtubules, where the lumen of these microtubules is loaded with an agent for the treatment of petroleum well environments, and where these loaded microtubules are dispersed in a **liq. phase carrier** selected from aq. carriers, non-aq. carriers, and emulsions of aq. and non-aq. materials. This method may also be practiced using a pill made of a consolidated mass of tubules loaded with one or more active agents, typically bound with a binder.
RE.CNT 3
RE
(1) Pardue; US 5018577 A 1991 HCAPLUS
(2) Price; US 5492696 A 1996
(3) Price; US 5651976 A 1997

L1 ANSWER 2 OF 13 HCAPLUS COPYRIGHT 2000 ACS
AN 1999:708779 HCAPLUS
DN 131:351620
TI Solution phase biopolymer synthesis of oligodeoxyribonucleotides using

multifunctional **liq. phase carriers**
IN Koster, Hubert; Worl, Ralf
PA USA
SO PCT Int. Appl., 88 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 9955718	A2	19991104	WO 1999-US8939	19990426
WO 9955718	A3	19991216		

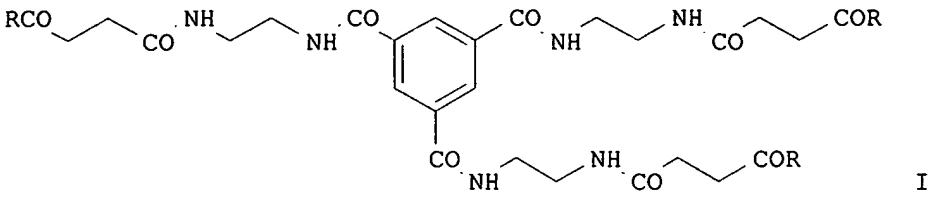
W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

AU 9936643	A1	19991116	AU 1999-36643	19990426
PRAI US 1998-67337	19980427			
WO 1999-US8939	19990426			

AB Multifunctional **liq. phase carriers** (LPCs) and methods of using LPCs for the prepn. of biopolymers are provided. The LPCs are highly sym. compds. that possess more than two points of attachment for biopolymer synthesis. The LPCs have the formula Sp(X1)n, where Sp is a highly sym. moiety such that all X1 groups are equiv. X1 is a functional group that is suitable for biopolymer synthesis, including OH, SH, NH2, COOH and the like. Biopolymers that may be produced using the methods provided include oligonucleotides, peptides, protein nucleic acids (PNAs) and oligosaccharides. Analogs of the biopolymers may also be prepd. using the methods. Thus decamer d(GACCGGCAGT) was prepd. using multifunctional **liq. phase carriers**.

L1 ANSWER 3 OF 13 HCAPLUS COPYRIGHT 2000 ACS
AN 1999:176582 HCAPLUS
DN 131:5469
TI The use of **liquid phase carriers** for large scale oligodeoxyribonucleotide synthesis in solution via phosphoramidite chemistry
AU Worl, Ralf; Koster, Hubert
CS Faculty of Chemistry, Department of Biochemistry and Molecular Biology, University of Hamburg, Hamburg, D-20146, Germany
SO Tetrahedron (1999), 55(10), 2957-2972
CODEN: TETRAB; ISSN: 0040-4020
PB Elsevier Science Ltd.
DT Journal
LA English
GI



I

AB Nucleoside derivs. coupled to a multifunctional highly sym. primary amine I (R = 3'-O-thymidine) built the fundamental of a convenient method for large scale oligodeoxyribonucleotide synthesis in soln. The basic purifn. for the fast isolation of intermediates is obtained by gel permeation chromatog. Monomer and dimer phosphoramidites are used for the prepn. of short oligodeoxyribonucleotides. Total cycle yields between 81 and 95 % and av. cycle yields of 87 % were obtained. MALDI-TOF-mass spectrometry was used for the anal. of the fully protected intermediates during synthesis.

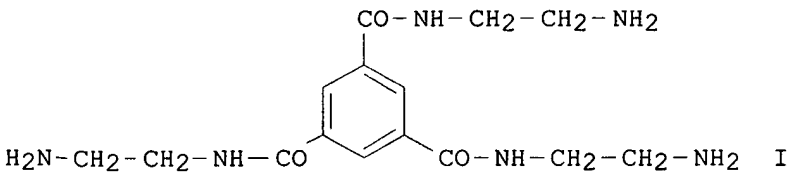
RE.CNT 21

RE

(1) Beaucage, S; Tetrahedron 1992, V48(12), P2223 HCAPLUS
(2) Beaucage, S; Tetrahedron 1993, V49(10), P1925 HCAPLUS
(3) Beaucage, S; Tetrahedron 1993, V49(28), P6123 HCAPLUS
(4) Brown, E; Methods Enzymol 1979, V68, P109 HCAPLUS
(5) Cusack, N; Tetrahedron Lett 1973, P2209 HCAPLUS

ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 4 OF 13 HCAPLUS COPYRIGHT 2000 ACS
AN 1999:176579 HCAPLUS
DN 130:267701
TI Synthesis of new **liquid phase carriers** for use in large scale oligodeoxyribonucleotide synthesis in solution
AU Worl, Ralf; Koster, Hubert
CS Faculty of Chemistry, Department of Biochemistry and Molecular Biology, University of Hamburg, Hamburg, D-20146, Germany
SO Tetrahedron (1999), 55(10), 2941-2956
CODEN: TETRAB; ISSN: 0040-4020
PB Elsevier Science Ltd.
DT Journal
LA English
GI



I

AB The synthesis of multifunctional sym. primary amines, e.g. I, and the covalent binding of 5'-O-dimethoxytrityl-deoxynucleoside derivs. to their

amino groups is described. Different strategies for dedimethoxytritylation including the use of strong acidic ion exchangers or protic acids and modified silica gels and/or gel permeation chromatog. are developed. The resulting **liq. phase carriers** are suitable for large scale oligodeoxyribonucleotide synthesis in soln. using phosphoramidites and gel permeation chromatog. for fast isolation of intermediates.

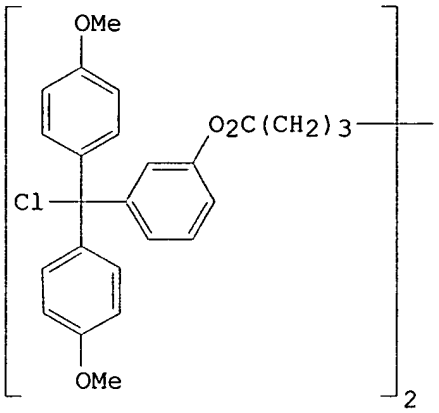
RE.CNT 32
RE
(3) Beaucage, S; Tetrahedron 1992, V48, P2223 HCAPLUS
(4) Beaucage, S; Tetrahedron 1993, V49, P1925 HCAPLUS
(5) Beaucage, S; Tetrahedron 1993, V49, P6123 HCAPLUS
(6) Beaucage, S; Tetrahedron Lett 1981, V22, P1859 HCAPLUS
(7) Beck, S; Anal Chem 1990, V62, P2258 HCAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 5 OF 13 HCAPLUS COPYRIGHT 2000 ACS
AN 1996:322063 HCAPLUS
DN 125:22878
TI Carrier lifetimes in n-type HgCdTe
AU Capper, P.
CS GEC-Marconi Infra-Red, Southampton/Hants., SO9 7QG, UK
SO EMIS Datarev. Ser. (1994), 10(Properties of Narrow Gap Cadmium-Based Compounds), 227-232
CODEN: EDSEE3; ISSN: 0950-1398
DT Journal; General Review
LA English
AB A review with 56 refs. The topics include the results for LPE, VPE, and MBE grown material.

L1 ANSWER 6 OF 13 HCAPLUS COPYRIGHT 2000 ACS
AN 1984:595181 HCAPLUS
DN 101:195181
TI Cyclohexane as a **liquid phase carrier** in hydrogen storage and transport
AU Cacciola, G.; Giordano, N.; Restuccia, G.
CS CNR, Pistunina, 98013, Italy
SO Int. J. Hydrogen Energy (1984), 9(5), 411-19
CODEN: IJHEDX; ISSN: 0360-3199
DT Journal
LA English
AB Full reversibility for the (de)hydrogenation of cyclohexane Cy [110-82-7], in the presence of a proper catalyst was proven. The round-trip efficiency for a closed cycle to store H amts. to .apprx.98%, provided it is possible to recover the exothermic reaction heat. From economic evaluation, in spite of heat penalties and losses, systems based on the reversible Cy (de)hydrogenation process are more advantageous than conventional ones, esp. because of the low cost of materials storage and high H d./unit vol. (0.056 g H/cm3 (Cy)liq.). Most important, the system provides a safe and simple means for H transport over any desirable distance, the carrier being in a liq. phase.

L1 ANSWER 7 OF 13 HCAPLUS COPYRIGHT 2000 ACS
AN 1983:422843 HCAPLUS
DN 99:22843
TI Purification orientated synthesis of oligodeoxynucleotides in solution
AU Biernat, J.; Wolter, A.; Koester, H.

CS Inst. Org. Chem. Biochem., Univ. Hamburg, Hamburg, D-2000, Fed. Rep. Ger.
SO Tetrahedron Lett. (1983), 24(8), 751-4
CODEN: TELEAY; ISSN: 0040-4039
DT Journal
LA English
GI



I

AB A **liq.-phase carrier** I for stepwise build up of oligodeoxynucleotides in soln. was prepd. by condensation reaction of (4-MeOC6H4)2C(C6H4OH-3)OH with [ClCO(CH2)3]2, followed by chlorination with AcCl. Tritylation of thymidine-3'-2-chlorophenyl-2,2,2-trichloroethylphosphate with I gave 70% of the corresponding, fully protected nucleotide (2 mol nucleotide/1 mol **liq.-phase carrier**). The F3CCH2 protecting groups of this nucleotide were removed, and the resulting deprotected nucleotide was condensed with further protected nucleotides. Total time for a condensation/purifn. cycle was 4 h. In this way d(TTTATT) and d(TTTATTCCT) were prepd.

L1 ANSWER 8 OF 13 HCAPLUS COPYRIGHT 2000 ACS
AN 1982:600748 HCAPLUS
DN 97:200748
TI Cyclohexane as a **liquid phase carrier** in hydrogen storage and transport
AU Cacciola, G.; Giordano, N.
CS Processi Chim. Trasformaz. Accumulo Energ., Ist. CNR Ric. Metodi, Messina, Italy
SO Adv. Hydrogen Energy (1982), 3(Hydrogen Energy Prog. 4, Vol. 3), 1345-58
CODEN: AHENDB; ISSN: 0276-2412
DT Journal
LA English
AB Dehydrogenation of cyclohexane [110-82-7] in presence of a proper catalyst (Pt on honeycomb) is fully reversible. Exptl. work in a small-scale reactor substantiated the advantages of this process for H storage and safe transport. A closed-loop cycle was worked out characterized by 3 phases: H storage, cyclohexane transport, and release of H to user. The practical round trip efficiency for closed cycle is .apprx.98%, provided it is possible to recover the exothermic reaction

heat. Economically, the systems based on cyclohexane dehydrogenation are more advantageous than conventional ones.

L1 ANSWER 9 OF 13 HCAPLUS COPYRIGHT 2000 ACS
AN 1982:144891 HCAPLUS
DN 96:144891
TI Gas-chromatographic determination of the quality of butanol
AU Bezglasnaya, L. V.; Lapitskaya, O. I.; Zosimov, E. V.
CS USSR
SO Fermentn. Spirt. Prom-st. (1982), (2), 15-16
CODEN: FSPMAM; ISSN: 0367-3197
DT Journal
LA Russian
AB The gas-chromatog. monitoring of butanol [71-36-3] in an enriched mixt. and in the industrial-grade product was optimized by using a thermal detector and a column (length 4 m, diam. 4 mm) packed with Polisorb-1 coated with 5% PEG-4000 as a stationary **liq. phase**, **carrier** gas output flow rate 45 mL/min, column temp. 170.degree., and injection temp. 175.degree..

L1 ANSWER 10 OF 13 HCAPLUS COPYRIGHT 2000 ACS
AN 1981:111446 HCAPLUS
DN 94:111446
TI Fundamental aspects of photoeffects at the n-gallium arsenide-molten-salt interphase
AU Gale, R. J.; Smith, P.; Singh, P.; Rajeshwar, K.; Dubow, J.
CS Dep. Electr. Eng., Colorado State Univ., Fort Collins, CO, 80523, USA
SO ACS Symp. Ser. (1981), 146(Photoeff. Semicond.-Electrolyte Interfaces), 343-58
CODEN: ACSMC8; ISSN: 0097-6156
DT Journal
LA English
AB By this study an effort was made to model a semiconductor/fused salt electrolyte interphase. The system studied was: n-GaAs/AlCl3 1-butylpyridinium chloride melt/vitreous C, with ferrocene/ferricenium redox couple as the **liq. phase carrier**. Capacitance-potential, linear-sweep voltammetry, and admittance measurements were used to characterize the n-GaAs/salt melt interphase. Semiconductor crystal orientation was shown to be an important factor in the manner in which the electrolyte can influence the surface potentials.

L1 ANSWER 11 OF 13 HCAPLUS COPYRIGHT 2000 ACS
AN 1974:468909 HCAPLUS
DN 81:68909
TI Characteristics of chromatographic column packings based on Polish supports
AU Suprynowicz, Zdzislaw; Czajkowska, Teresa; Miedziak, Irena
CS Univ. Marii Curie-Sklodowskiej, Lublin, Pol.
SO Chem. Anal. (Warsaw) (1974), 19(2), 389-400
CODEN: CANWAJ
DT Journal
LA Polish
AB Several stationary phases made of Polish supports were investigated. The column packings were characterized with the aid of optimum working conditions (support, **liq. phase**, **carrier** gas flow rate), example sepns. of model mixts. (aliph. hydrocarbons-arom. hydrocarbons, aliph. hydrocarbons-aliph. alcs., arom. hydrocarbons-aliph.

alcs., and aliph. alcs.-esters) and calcd. length of the chromatog. columns.

L1 ANSWER 12 OF 13 HCAPLUS COPYRIGHT 2000 ACS
AN 1973:421243 HCAPLUS
DN 79:21243
TI Determination of odorants in gas
AU Kavan, Ivo
CS Czech.
SO Sb. Prednasek 50 [Padesatemu] Vyroci Ustavu Vyzk. Vyuziti Paliv (1972), 162-70 Publisher: Ustav Vyzk. Vyuziti Paliv, Bechovice u Prahy, Czech. CODEN: 26JAAH
DT Conference
LA Czech
AB Odorants in natural gas and in city gas were detd. by gas chromatog. The most suitable liq. phases were estd. by the Rohrschneider method. The operational conditions for the single odorants are given in the following order: column length, outside diam., percentage and type of **liq . phase, carrier,** temp. Tetrahydrothiophene, Et2S; Me2S, as well as purity of concd. odorants were detd. N (.apprx.50 ml/min) was used as carrier gas in all cases. Using a thermoionization detector with 1 .times. 10-8 mole S sensitivity, the following S-contg. compds. were identified in gasoline for odorization purposes from the Rectisol process: H2S, CS2, MeSH, EtSH, Me2S, Et2S, thiophene, and methylthiophene.

L1 ANSWER 13 OF 13 HCAPLUS COPYRIGHT 2000 ACS
AN 1969:505624 HCAPLUS
DN 71:105624
TI Preparation and study of a macroporous diatomite carrier for gas chromatography
AU Bryzgalova, N. I.; Vu Van Thue; Gavrilova, T. B.; Kiselev, A. V.
CS Mosk. Gos. Univ. im. Lomonosova, Moscow, USSR
SO Neftekhimiya (1969), 9(3), 463-9
CODEN: NEFTAH
DT Journal
LA Russian
AB Kisatibsk diatomite was subjected to various treatments in order to find the treatment most suitable for the prepn. of diatomite as a **liq . phase carrier** in gas chromatog. Adsorbates of different mol. structure (n-alkanes, C6H6, Et2O, Me2CO, and lower aliphatic alcs.) were tried. Treatment of diatomite sepd. by sedimentation from an aq. suspension in an autoclave with steam (230.degree. and 40 atm.) followed by calcination (900-1200.degree.) gives a more uniform pore structure. Chem. treatment of sepd. diatomite with HCl, HNO3, soda, and Me2SiCl2 gives a very good carrier.

=> D BIB ABS

L3 ANSWER 1 OF 1 HCAPLUS COPYRIGHT 2000 ACS
AN 1999:98326 HCAPLUS
DN 130:196945
TI Solution phase synthesis of potential DNA-binding molecules based on the PNA backbone
AU Challa, Hemavathi; Woski, Stephen A.
CS Department of Chemistry and Coalition for Biomolecular Products, The University of Alabama, Tuscaloosa, AL, 35487-0336, USA
SO Tetrahedron Lett. (1999), 40(3), 419-422
CODEN: TELEAY; ISSN: 0040-4039
PB Elsevier Science Ltd.
DT Journal
LA English
AB The N-(2-aminoethyl)glycine backbone unit of PNA has been derivatized with pyrene-acetic acid and acetic acid moieties to produce monomers for the synthesis of potential poly-intercalators. Short oligomers contg. these residues have been assembled using soln. phase coupling reactions.
RE.CNT 22
RE
(1) Armitage, B; Nucleic Acids Res 1998, V26, P715 HCAPLUS
(2) Armitage, B; Proc Natl Acad Sci USA 1997, V94, P12320 HCAPLUS
(3) Atwell, G; J Med Chem 1986, V29, P69 HCAPLUS
(4) Chen, F; Nucleic Acids Res 1983, V11, P7231 HCAPLUS
(6) Dueholm, K; New J Chem 1997, V21, P19 HCAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

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=> d his

     (FILE 'HOME' ENTERED AT 10:06:32 ON 04 DEC 2000)

     FILE 'HCAPLUS' ENTERED AT 10:06:37 ON 04 DEC 2000
L1            14 S WORL R?/AU
L2           106 S KOSTER H?/AU
L3             3 S L1 AND L2
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     FILE 'REGISTRY' ENTERED AT 10:07:01 ON 04 DEC 2000

     FILE 'HCAPLUS' ENTERED AT 10:08:33 ON 04 DEC 2000

     FILE 'WPIDS, BIOSIS, MEDLINE' ENTERED AT 10:09:17 ON 04 DEC 2000
L4             1 S L1
L5           246 S L2
L6             1 S L4 AND L5
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Inventorsearch

=> d bib abs ind

L3 ANSWER 1 OF 3 HCAPLUS COPYRIGHT 2000 ACS
AN 1999:708779 HCAPLUS
DN 131:351620
TI Solution phase biopolymer synthesis of oligodeoxyribonucleotides using multifunctional liq. phase carriers
IN **Koster, Hubert; Worl, Ralf**
PA USA
SO PCT Int. Appl., 88 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9955718	A2	19991104	WO 1999-US8939	19990426
	WO 9955718	A3	19991216		
	W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	AU 9936643	A1	19991116	AU 1999-36643	19990426
PRAI	US 1998-67337		19980427		
	WO 1999-US8939		19990426		

AB Multifunctional liq. phase carriers (LPCs) and methods of using LPCs for the prepn. of biopolymers are provided. The LPCs are highly sym. compds. that possess more than two points of attachment for biopolymer synthesis. The LPCs have the formula Sp(X1)n, where Sp is a highly sym. moiety such that all X1 groups are equiv. X1 is a functional group that is suitable for biopolymer synthesis, including OH, SH, NH2, COOH and the like. Biopolymers that may be produced using the methods provided include oligonucleotides, peptides, protein nucleic acids (PNAs) and oligosaccharides. Analogs of the biopolymers may also be prepd. using the methods. Thus decamer d(GACCGGCAGT) was prepd. using multifunctional liq. phase carriers.
IC ICM C07H021-00
ICS C07K001-00
CC 33-10 (Carbohydrates)
ST peptide nucleic acid soln phase synthesis; oligodeoxyribonucleotide soln phase synthesis liq phase carrier
IT Oligodeoxyribonucleotides
RL: SPN (Synthetic preparation); PREP (Preparation)
(soln. phase biopolymer synthesis of oligodeoxyribonucleotides using multifunctional liq. phase carriers)
IT 115-77-5, reactions 2672-58-4 16687-60-8 107905-15-7 247916-13-8 247916-14-9
RL: RCT (Reactant)

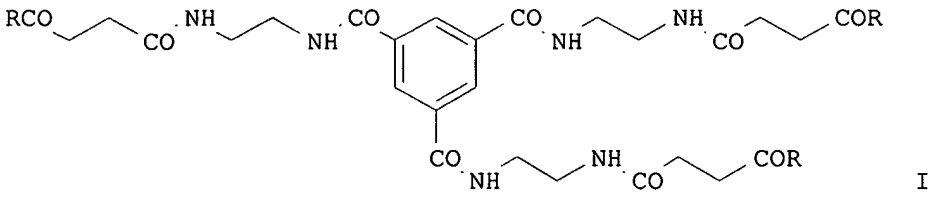
(soln. phase biopolymer synthesis of oligodeoxyribonucleotides using multifunctional liq. phase carriers)

IT 2465-91-0P 132491-87-3P 146669-14-9P 221898-80-2P 221898-84-6P
221898-85-7P 221898-86-8P 222306-76-5P 250641-33-9P 250641-35-1P
250641-36-2P 250641-37-3P 250641-38-4P 250641-39-5P 250641-41-9P
250641-42-0P 250641-47-5P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(soln. phase biopolymer synthesis of oligodeoxyribonucleotides using multifunctional liq. phase carriers)

IT 106678-62-0P 221898-81-3P 221898-82-4P 221898-83-5P 249268-52-8P
250641-44-2P 250641-45-3P
RL: SPN (Synthetic preparation); PREP (Preparation)
(soln. phase biopolymer synthesis of oligodeoxyribonucleotides using multifunctional liq. phase carriers)

=> d bib abs ind 2

L3 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2000 ACS
AN 1999:176582 HCAPLUS
DN 131:5469
TI The use of liquid phase carriers for large scale oligodeoxyribonucleotide synthesis in solution via phosphoramidite chemistry
AU **Worl, Ralf; Koster, Hubert**
CS Faculty of Chemistry, Department of Biochemistry and Molecular Biology, University of Hamburg, Hamburg, D-20146, Germany
SO Tetrahedron (1999), 55(10), 2957-2972
CODEN: TETRAB; ISSN: 0040-4020
PB Elsevier Science Ltd.
DT Journal
LA English
GI



I

AB Nucleoside derivs. coupled to a multifunctional highly sym. primary amine I (R = 3'-O-thymidine) built the fundamental of a convenient method for large scale oligodeoxyribonucleotide synthesis in soln. The basic purifn. for the fast isolation of intermediates is obtained by gel permeation chromatog. Monomer and dimer phosphoramidites are used for the prepn. of short oligodeoxyribonucleotides. Total cycle yields between 81 and 95 % and av. cycle yields of 87 % were obtained. MALDI-TOF-mass spectrometry was used for the anal. of the fully protected intermediates during synthesis.

CC 33-10 (Carbohydrates)
ST oligodeoxyribonucleotide large scale synthesis liq phase
IT Oligodeoxyribonucleotides
RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)
(use of liq. phase carriers for large scale oligodeoxyribonucleotide synthesis in soln. via phosphoramidite chem.)
IT 93183-15-4 98796-51-1 98796-53-3 102212-98-6 222306-79-8 222306-81-2
RL: RCT (Reactant)
(use of liq. phase carriers for large scale oligodeoxyribonucleotide synthesis in soln. via phosphoramidite chem.)
IT 221898-84-6P 222306-75-4P 222306-76-5P 225226-59-5P 225226-60-8P 225369-12-0P 225369-13-1P 225369-14-2P 225369-15-3P 225369-16-4P 225369-17-5P 225369-18-6P 225369-19-7P 225369-20-0P 225369-21-1P 225369-22-2P 225369-23-3P 225505-78-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)

(use of liq. phase carriers for large scale oligodeoxyribonucleotide synthesis in soln. via phosphoramidite chem.)

IT 222306-77-6P 222306-78-7P 224968-02-9P 225093-87-8P 225226-61-9P
225226-62-0P 225369-24-4P
RL: SPN (Synthetic preparation); PREP (Preparation)
(use of liq. phase carriers for large scale oligodeoxyribonucleotide synthesis in soln. via phosphoramidite chem.)

RE.CNT 21

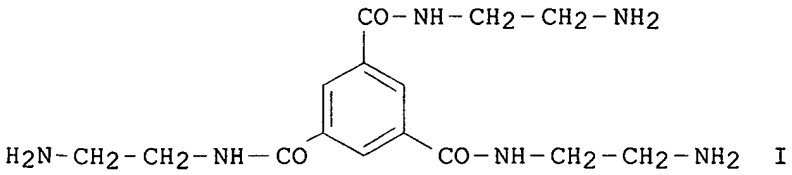
RE

(1) Beaucage, S; Tetrahedron 1992, V48(12), P2223 HCAPLUS
(2) Beaucage, S; Tetrahedron 1993, V49(10), P1925 HCAPLUS
(3) Beaucage, S; Tetrahedron 1993, V49(28), P6123 HCAPLUS
(4) Brown, E; Methods Enzymol 1979, V68, P109 HCAPLUS
(5) Cusack, N; Tetrahedron Lett 1973, P2209 HCAPLUS

ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d bib abs ind 3

L3 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2000 ACS
AN 1999:176579 HCAPLUS
DN 130:267701
TI Synthesis of new liquid phase carriers for use in large scale oligodeoxyribonucleotide synthesis in solution
AU **Worl, Ralf; Koster, Hubert**
CS Faculty of Chemistry, Department of Biochemistry and Molecular Biology, University of Hamburg, Hamburg, D-20146, Germany
SO Tetrahedron (1999), 55(10), 2941-2956
CODEN: TETRAB; ISSN: 0040-4020
PB Elsevier Science Ltd.
DT Journal
LA English
GI



I

AB The synthesis of multifunctional sym. primary amines, e.g. I, and the covalent binding of 5'-O-dimethoxytrityl-deoxynucleoside derivs. to their amino groups is described. Different strategies for dedimethoxytritylation including the use of strong acidic ion exchangers or protic acids and modified silica gels and/or gel permeation chromatog. are developed. The resulting liq. phase carriers are suitable for large scale oligodeoxyribonucleotide synthesis in soln. using phosphoramidites and gel permeation chromatog. for fast isolation of intermediates.

CC 33-10 (Carbohydrates)
ST oligodeoxyribonucleotide large scale synthesis liq phase demethoxytritylation
IT Oligodeoxyribonucleotides
RL: SPN (Synthetic preparation); PREP (Preparation)
(synthesis of new liq. phase carriers for use in large scale oligodeoxyribonucleotide synthesis in soln.)
IT 115-77-5, reactions 2672-58-4 4097-89-6 107905-15-7
RL: RCT (Reactant)
(synthesis of new liq. phase carriers for use in large scale oligodeoxyribonucleotide synthesis in soln.)
IT 2465-91-0P 132491-87-3P 146669-14-9P 221898-80-2P 221898-81-3P 221898-83-5P 221898-85-7P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(synthesis of new liq. phase carriers for use in large scale oligodeoxyribonucleotide synthesis in soln.)
IT 221898-82-4P 221898-84-6P 221898-86-8P
RL: SPN (Synthetic preparation); PREP (Preparation)
(synthesis of new liq. phase carriers for use in large scale oligodeoxyribonucleotide synthesis in soln.)

Searched by John Dantzman 703-308-4488

RE.CNT 32
RE
(3) Beaucage, S; Tetrahedron 1992, V48, P2223 HCAPLUS
(4) Beaucage, S; Tetrahedron 1993, V49, P1925 HCAPLUS
(5) Beaucage, S; Tetrahedron 1993, V49, P6123 HCAPLUS
(6) Beaucage, S; Tetrahedron Lett 1981, V22, P1859 HCAPLUS
(7) Beck, S; Anal Chem 1990, V62, P2258 HCAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d all

L6 ANSWER 1 OF 1 MEDLINE
AN 96299088 MEDLINE
DN 96299088
TI Analysis of ligase chain reaction products via matrix-assisted laser desorption/ionization time-of-flight-mass spectrometry.
AU Jurinke C; van den Boom D; Jacob A; Tang K; **Worl R; Koster H**
CS Department of Biochemistry, Faculty of Chemistry, University of Hamburg, D-20146, Germany.
SO ANALYTICAL BIOCHEMISTRY, (1996 Jun 1) 237 (2) 174-81.
Journal code: 4NK. ISSN: 0003-2697.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 199611
AB A rapid and accurate detection of ligation products generated in ligase chain reactions (LCR) by using matrix-assisted laser desorption/ionization time-of-flight-mass spectrometry (MALDI-TOF-MS) is reported. LCR with Pfu DNA ligase was performed with a wild-type template and a template carrying a single point mutation within the Escherichia coli lacI gene as a model system. Starting from about 1 fmol of template DNA the ligation product generated in the positive reactions was analyzed with HPLC and MALDI-TOF-MS, whereby the need of proper sample purification prior to mass spectrometric analysis was demonstrated. A purification procedure with a high potential for automation using streptavidin-coated magnetic particles and ultrafiltration was introduced. Plasmid DNA and short single-stranded oligonucleotides have been used as template. A point mutation could be discriminated from the wild-type template due to the absence or presence of ligation product. This approach allows the rapid-specific detection of template DNA in femtomole amounts and moreover can distinguish between sequence variations in DNA molecules down to point mutations without the need for labeling, gel electrophoresis, membrane transfer, or hybridization procedures.
CT Base Sequence
Chromatography, High Pressure Liquid
*DNA Ligases
DNA Mutational Analysis: MT, methods
DNA, Bacterial: GE, genetics
DNA, Bacterial: IP, isolation & purification
Escherichia coli: GE, genetics
Evaluation Studies
Lac Operon
Molecular Sequence Data
Oligodeoxyribonucleotides: GE, genetics
Point Mutation
*Polymerase Chain Reaction: MT, methods
*Spectrometry, Mass, Matrix-Assisted Laser Desorption-Ionization: MT, methods